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10/525,767

02/28/2005

Franz-Josef Dietzen

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EXAMINER

ZEMEL, IRINA SOPJIA

ART UNIT

PAPER NUMBER

1711

MAIL DATE

DELIVERY MODE

05/02/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/525,767

Applicant(s)

DIETZEN ET AL.

Examiner

Irina S. Zemel

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/28/05, 8-25-05
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 9-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patents 4,990,542 and 5,317,033 (of record) both to Monani, et al., (hereinafter "Motani '542" and Motani '033") in combination with EP 0915127 to BASf or WO 98/51735 to BASf both of record, (hereinafter "BASF EP" and "BASF WO").

Both Motani references disclose foams obtained by a method that includes addition of a blowing agent to a thermoplastic polymer melt, and cooling and extrusion, through a die, of the polymer melt comprising blowing agent. See all illustrative examples in both references. The disclosed blowing agent can be any known hydrocarbon, halohydrocarbon, etc. as per disclosure of Motani '542, column 5, lines 36-45 or Motani '033, column 7, lines 57-68. Both references further expressly teach addition of water in combination with water absorbing agent into the composition in the amount corresponding to the claimed amounts. See Motani '033, column 4, lines 45-47, or Motani '542, column 7, lines 26-40. Water can be used alone, but preferably in combination with alcohol as per disclosure of Motani '033, column 5, lines 47-55 or Motani '542, column 4, lines 13-22.

Both references further expressly disclose addition of water absorbent components that can be high molecular weight compounds (Motani '033 abstract, column 5, examples) or silica compounds (Motani '542 column 3-4, examples).

In addition, both Motani references expressly disclose incorporation of cell size controlling agents that include talc, (or phyllosilicates), that inherently perform the function of absorbers. See Motani '542, column 3, last paragraph, or Motani

Motani do not disclose palletizing or granulating extruded polymers by cutting of the polymer melt comprising blowing agent downstream of the die at reduced pressure with foaming to give foam beads, however, the step of underwater granulating of expandable polystyrene to obtain beads of desired shape is well known in the art of expanded polystyrene as evident form, for example, both BASF references. Thus, adding of step of underwater palletizing to the process of Motani would have been obvious for the reasons discussed above, i.e., to obtain composition in a desired shape for applications where such shape is needed.

Alternatively, use of the combination of polystyrene with the claimed blowing agent containing water, alcohol and absorber in process of BASF (either WO or EP) would have been obvious in view of teachings of either one of Motani, as using such combined blowing agent mixtures results in improved heat insulating and flexural properties as per expressed teachings of Motani.

Claims 7-8 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Motani '033 or Motani '542 in combination with BASF EP or BASF WO as applied

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to claims 1-3 above and further in view of US Patent 4,585,825 to Wesselmann;
(hereinafter "Wessemann").

The disclosure of Motani references and the EP references are discussed above. The Montani references, while expressly discloses that the process of the invention is applicable to polystyrenes and polyolefins with polystyrenes being preferred polymers, do not expressly address the molecular weight distribution of the polystyrenes suitable for the invention, thus implying that any known polystyrene would have been usable in the disclosed invention. Use of bi- or multi-modal molecular weight distribution polystyrenes with broad molecular weight distribution in the inventions of Montani (as modified for underwater granulating per disclosures of other references) would have been obvious as it is notoriously known in the art that polystyrenes with bi- and/or multi-modal molecular weight distribution exhibit superior properties such as processability, heat resistance and other physical properties as compared to single peak MED polystyrenes. This position is fully supported by, for example, disclosure of Wesselmann, disclosing multi-modal polystyrenes and their superior physical characteristics. Thus, invention as claimed would have been obvious in view of the combined teachings of the cited references absent showing of unexpected results that can be clearly attributed to the claimed MWD of polymers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irina S. Zemel whose telephone number is (571)272-0577. The examiner can normally be reached on Monday-Friday 9-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571)272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ISZ

Irina S. Zemel
Primary Examiner
Art Unit 1711

